

CLAIMS

1. A valve unit including a body; a first passage extending through the body, the first passage having an inlet opening and an outlet opening; a movable member rotatably provided in the first passage between the inlet opening and the outlet opening; a second passage extending through the movable member, the movable member being adapted to be rotatable within the first passage to selectively inversely align the second passage with the first passage; a control member movably located inside the second passage, the control member being adapted to regulate the filling of a first volume of flowable substance through the inlet opening into the second passage and, after rotation of the movable member to invert the second passage relative to the first passage, to regulate the exhaustion of the first volume of flowable substance from the second passage through the outlet opening, while simultaneously regulating the intake of a second volume of flowable substance through the inlet opening into the second passage; and alignment means associated with the movable member for aligning the second passage with the first passage so that they are continuous with each other, wherein the alignment means includes a ratchet formation allowing unidirectional rotation of the movable member.

2. A valve unit including a body; a first passage extending through the body, the first passage having an inlet opening and an outlet opening; a movable member rotatably provided in the first passage between the inlet opening and the outlet opening; a second passage extending through the movable member, the movable member being adapted to be rotatable within the first passage to selectively inversely align the second passage with the first passage; a control member movably located inside the second passage, the control member being adapted to regulate the filling

of a first volume of flowable substance through the inlet opening into the second passage and, after rotation of the movable member to invert the second passage relative to the first passage, to regulate the exhaustion of the first volume of flowable substance from the second passage through the outlet opening, while simultaneously regulating the intake of a second volume of flowable substance through the inlet opening into the second passage; and a cap adapted to be removably attached to the body, wherein the cap has a lip adapted to prevent attachment of the cap if the first and second passages are in alignment.

3. A valve unit as claimed in claim 2, in which the cap has a lip adapted to prevent movement of the movable member when the cap is attached to the body.

4. A valve unit including a body; a first passage extending through the body, the first passage having an inlet opening and an outlet opening; a movable member rotatably provided in the first passage between the inlet opening and the outlet opening; a second passage extending through the movable member, the movable member being adapted to be rotatable within the first passage to selectively inversely align the second passage with the first passage; a control member movably located inside the second passage, the control member being adapted to regulate the filling of a first volume of flowable substance through the inlet opening into the second passage and, after rotation of the movable member to invert the second passage relative to the first passage, to regulate the exhaustion of the first volume of flowable substance from the second passage through the outlet opening, while simultaneously regulating the intake of a second volume of flowable substance through the inlet opening into the second passage; and a one-way valve associated with the first passage and being

adapted to reduce retraction of the flowable substance from the second passage through the inlet opening into a container during use.

5. A valve unit including a body; a first passage extending through the body, the first passage having an inlet opening and an outlet opening; a
5 movable member rotatably provided in the first passage between the inlet opening and the outlet opening; a second passage extending through the movable member, the movable member being adapted to be rotatable within the first passage to selectively inversely align the second passage with the first passage; a control member movably located inside the
10 second passage, the control member being adapted to regulate the filling of a first volume of flowable substance through the inlet opening into the second passage and, after rotation of the movable member to invert the second passage relative to the first passage, to regulate the exhaustion of the first volume of flowable substance from the second passage through
15 the outlet opening, while simultaneously regulating the intake of a second volume of flowable substance through the inlet opening into the second passage; and the second passage having flexible side walls.
6. A valve unit as claimed in claim 5, which includes a blocking member associated with the second passage, the blocking member being adapted
20 to restrict movement of the control member within the second passage.
7. A valve unit as claimed in claim 6, in which the blocking member is adapted to at least partially constrict the side walls of the second passage.
8. A valve unit as claimed in claim 6 or claim 7, in which the blocking
25 member is movable relative to the second passage for changing volumes of the second passage.

9. A valve unit including a body; a first passage extending through the body, the first passage having an inlet opening and an outlet opening; a movable member rotatably provided in the first passage between the inlet opening and the outlet opening; a second passage extending through the movable member, the movable member being adapted to be rotatable within the first passage to selectively inversely align the second passage with the first passage; a control member movably located inside the second passage, the control member being adapted to regulate the filling of a first volume of flowable substance through the inlet opening into the second passage and, after rotation of the movable member to invert the second passage relative to the first passage, to regulate the exhaustion of the first volume of flowable substance from the second passage through the outlet opening, while simultaneously regulating the intake of a second volume of flowable substance through the inlet opening into the second passage; and a bypass passage in which no control member is provided being adapted to allow unrestricted and unmeasured exhaustion of the flowable substance to pass through the first passage.
10. A valve unit including a body; a first passage extending through the body, the first passage having an inlet opening and an outlet opening; a movable member rotatably provided in the first passage between the inlet opening and the outlet opening; a second passage extending through the movable member, the movable member being adapted to be rotatable within the first passage to selectively inversely align the second passage with the first passage; a control member movably located inside the second passage, the control member being adapted to regulate the filling of a first volume of flowable substance through the inlet opening into the second passage and, after rotation of the movable member to invert the second passage relative to the first passage, to regulate the exhaustion of

the first volume of flowable substance from the second passage through the outlet opening, while simultaneously regulating the intake of a second volume of flowable substance through the inlet opening into the second passage; and a self-closing mechanism being adapted to cause the first and second passages to be unaligned when not in use.

11. A valve unit as claimed in claim 10, in which the self-closing mechanism is a spring loaded cam.
12. A valve unit as claimed in any one of the preceding claims, which includes a counter for indicating a total number of dosages dispensed through the first passage.
13. A valve unit substantially as hereinbefore described with reference to and as illustrated in the accompanying schematic Figures 1 to 10.
14. A valve unit substantially as hereinbefore described with reference to and as illustrated in the accompanying schematic Figures 11 to 14.
15. A valve unit substantially as hereinbefore described with reference to and as illustrated in the accompanying schematic Figure 15.
16. A valve unit substantially as hereinbefore described with reference to and as illustrated in the accompanying schematic Figures 16 to 18.